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September 2019

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KJ, Joseph Jestin and Sornam, S Ally Dr., "E-RESOURCES AND ITS ADOPTION AMONG ENGINEERING COLLEGE FACULTY MEMBERS PERTAINING TO KERALA STATE" (2019). *Library Philosophy and Practice (e-journal)*. 2625.

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E-RESOURCES AND ITS ADOPTION AMONG ENGINEERING COLLEGE FACULTY MEMBERS PERTAINING TO KERALA STATE

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ABSTRACT

Matching with the many strides made in higher education, the engineering institutions in our country are devoting heavily on academic resources, specifically e-resources, since the quality of engineering institutions are also assessed in terms of availability of quality library references, collections, repositories and ICT tools for facilitating knowledge proliferation and its usage. An extensive study has been conducted among the Faculty of Engineering colleges in Kerala aimed to find the availability, infrastructure support and consumption status of various types of e-resources. As the part of study predesigned and well-structured questionnaire was distributed among the librarians and faculty members of the selected engineering colleges. Gathered data were analysed and results were compliant with the proposed hypothesis. The results give insights on availability e-resources in the engineering colleges, its usage and the associated and to rectify the problems face by the users while accessing e-resources thereby making the library service more beneficial for the academic community of the engineering colleges under study.

Keywords: *Library Resources, e-resources, e-journals, e-books, Engineering College Libraries, Resource Sharing, Information and communication Technology, Internet, Barriers of accessing e-resources, Usage of e-resources.*

INTRODUCTION

In modern age, availability of data and useful information is valuable for managers, policy makers, planners, technologists, scientists, doctors, lawyers, policemen and laymen, etc for analysis and their by taking appropriate decisions in their respective domains. Information is

key for many people in almost all sectors, including industry, public or private enterprises, academic circles, and in government organizations. One of the emerging areas of demand in higher studies is the availability and applications of useful data. More frequently, research scholars are undertaking their research works within large quantity of information. Naturally, the scenario demands great accuracy and sequence in data. Hence, in academic institutions there is an enormous necessity for quality repositories, materials and their accessibility. Modern libraries are widely considered as the prevalent access-point for data and information.

Technology enabled services provides better access, utilisation and archival of information; particularly electronic based resources or e-resources. With the tremendous proliferation of ICT (Information and Communication Technology) there is a shift from the usage of traditional book format to modern electronic format, in almost all the sectors; especially, in the area of science and technology, where it is more convenient to have information in electronic formats. Consequently, it is almost imperative that resources in academic institutions be in electronic formats; particularly in college and university libraries. A modern academic library should provide services in E-Databases, E-Journals, E-Magazines-Books/ E-Audio/ E-Images, Data/ GIS, Digital Library Projects, Electronic Exhibitions, E-Subject Guide, E-newsletters, E-conferences proceedings and Web search tools etc to name a few.

Moving with the trend, academic Institutions in India were also very keen in adopting digitization in their teaching and learning process. This transformation was well supplemented by equipping libraries with e-resources and supporting infrastructure. Quality monitoring institutions like UGC (University Grands Commission) and AICTE (All India Council for Technical Education) given adequate scrutiny and facilitation for this transformation. At this point of time, engineering institutions in the country, particularly in Kerala state, could confidently claim of having sufficient availability of e-resources in their libraries.

However, thinkers and policy makers are curious to assess the level of usage of the e-resources by engineering college faculty members for their knowledge enrichment and updation, teaching and learning process, as well as research. Additionally, there is a need to measure the impact of “resource digitization” among the student community.

Careful study and research among the faculty as well as detailed data collection in college libraries would shed some light into the adoption of e-resources among engineering college faculty members.

REVIEW OF LITERATURE

Over the last decade, many researchers have studied and summarized certain conclusions about the availability of the resources in academic institutions.

Kevalkumar Patel and Mahesh Darbar (2017) in their study focused on availability and use of e-resources by users of C. K. Shah Vijapurwala Institute of Management (CKSVIM) Library, Vadodara. The main objectives of their study were to identify the awareness of e-resources, know the users internet skills, purpose of use, identify satisfaction level of availability of e-resources, use of different e- resources, satisfactory level of using e-resources, factors influenced, impact of e-resources, different problem faced in the access of e-resource, preferred file format for e-resources and users suggestions to improve usages of e-resources. Survey method was used to carry out this research. A well- structured questionnaire was used to collect the primary data from the respondents; total 267 questionnaires were distributed to the sample population and received back 235 filled in questionnaires. The researcher took 235 questionnaires for analysis using simple percentage techniques.

Jestin and Sornam (2016) studied on awareness and availability of e-resources in engineering college libraries in Kerala. Questionnaire was distributed among the librarians of engineering colleges in Kerala. The result of this study provided information about the librarians' awareness about library consortia and e-resources, availability of e-resources and membership of engineering college libraries in these consortia, Infrastructural facilities available for utilizing the e-resources, etc. Some suggestions have been set forth to make the service more beneficial for the academic community of the engineering colleges under study.

Tyagi (2015) in his study revealed the current practices of e-resources related to acquisition, selection and mode of procurement, promotion and development policy of Management Libraries in National Capital Region (NCR) of Delhi. He reported that subscription of

databases is very popular among e-resources and subject relevancy is the main focus area for selection of e-resources.

Sasireka, Gopalakrishnan and Balamurugan (2011) in their study presented the status of available E-Resources in Engineering Institutions in Tamil Nadu, the paper described about the availability of electronic resources in academic libraries in Tamilnadu. It was based on the case study conducted in the Engineering Institutions of Tamilnadu. The study provides evidence of the current status of e-resources, selection and access to various e- resources.

SCOPE

- There are around one hundred and sixty Engineering colleges present in the state of Kerala. The present investigation is limited to a descriptive study and the scope of the study is confined to the libraries of engineering colleges in Kerala.

OBJECTIVES OF THE STUDY

- This study is an attempt to assess the availability of electronic resources in the Engineering College Libraries of Kerala.
- To examine the use of e-resources by engineering college faculty in Kerala.
- To identify the barriers in accessing e-resources.
- To give suggestions to improve the availability and use of e-resources

RESEARCH HYPOTHESIS

This study will be guided by the following null hypotheses:

There is no significant association between users' gender and usage of e-resources.

METHODOLOGY

Keeping in view the objectives of study, the adopted survey method comprised of a well-structured questionnaire, which was circulated among the librarians and faculty members to collect the necessary primary data.

POPULATION & SAMPLE SIZE

The study encompassed the Librarians of the Engineering Colleges in Kerala State. The researcher collected data from the established colleges incepted before the year 2003. Out of

69 colleges, responses from 52 colleges were able to collect. Librarians of all the 52 colleges were also included for the study.

A total of 2080 questionnaires were distributed to the Faculty members and out of which 1615 fully filled questionnaires were received back. The response rate was found to be 77.64%. Questionnaires received back incomplete were not considered for the study.

Respondents Surveyed

Regions of Kerala	Number of Engineering Colleges	Number of Librarians	Number of Faculty Members
North	8	8	264
Central	16	16	514
South	28	28	837
Total	52	52	1615

*North Kerala districts (Malabar region): Kasaragod, Kannur, Wayanad, Kozhikode and Malappuram.

Central Kerala districts (Kochi region): Palakkad, Thrissur and Ernakulam.

South Kerala districts (Travancore region): Thiruvananthapuram, Kollam, Alappuzha, Pathanamthitta, Kottayam and Idukki.

DATA ANALYSIS

The analysis and interpretation of the data collected through questionnaires are given below.

TABLE 1
TABLE SHOWING LIBRARY COLLECTION FOR E-RESOURCES

S.No	Library Collection for Non-Print sources	No of Respondents (n:52)	Percentage
1.	E-books		

	Below 500 books	40	76.9
	Above 500 books	12	23.1
2.	E-Journals		
	Below 500 journals	29	55.8
	Above 500 journals	23	44.2
3.	Online Databases		
	Below 5 Online databases	50	96.2
	Above 5 Online databases	2	3.8
4.	CD/DVD Collections		
	Up to 1000 CD/DVD collections	33	63.5
	1001 to 2000 CD/DVD collections	13	25.0
	Above 2000 CD/DVD collections	6	11.5
5.	Audio/Video Materials		
	Up to 100 Audio/Video Materials	38	73.1
	101 to 200 Audio/Video Materials	5	9.6
	Above 200 Audio/Video Materials	9	17.3

Source: *Primary Data*

It is found from table 1 that more than three-fourth (i.e. 76.9 percent) of the respondents expressed that library collected less than 500 e-books and more than half (i.e. 55.8 percent) of the respondents consented that library collected less than 500 e-journals. Vast majority (i.e. 96.2 percent) of the respondents stated that library collected less than 5 online database and majority (i.e. 63.5 percent) of the respondents specified that up to 1000 CD/ DVD collections were available in their library. Nearly three-fourth (i.e. 73.1 percent) of the respondents stated that up to 100 Audio/ Video Materials were available in their library.

TABLE 2
TABLE SHOWING TYPES OF DOCUMENTS AVAILABLE IN THE LIBRARY
IN DIGITAL FORMAT

S.No	Electronic resources available in the library	No of Respondents (n:52)	Percentage
1.	Ph.D. Theses		

	No	43	82.7
	Yes	9	17.3
2.	Project Reports		
	No	26	50.0
	Yes	26	50.0
3.	Seminar/Conference proceedings		
	No	28	53.8
	Yes	24	46.2
4.	Course Materials		
	No	25	48.1
	Yes	27	51.9

Source: *Primary Data*

Table 2 reflects different types of e-documents available in the library.

About the availability of different types of documents in e-format, 82.7 percent of libraries are not having e-thesis, 50 percent libraries have no e-project reports, 53.8 percent libraries have no seminar /conference proceedings in e-format and in 51.9 percent libraries course materials are available in electronic format.

TABLE 3
ASSOCIATION BETWEEN RESPONDENTS' GENDER AND USAGE OF E-RESOURCES

S.no	Usage of e-resources	Gender		Statistical Inference
		Male (N:1142)	Female (N:473)	
1.	E-journals			
	Rarely	81	34	$\chi^2=0.030$ df =2 p > 0.05 Not Significant
	Occasionally	825	343	
	Very often	236	96	
2.	E-Books			
	Rarely	71	29	$\chi^2=0.481$

	Occasionally	868	353	df =2
	Very often	203	91	p > 0.05
				Not Significant
3.	E-Theses			
	Not at all	458	187	$\chi^2=0.118$
	Rarely	279	114	df =3
	Occasionally	245	104	p > 0.05
	Very often	160	68	Not Significant
4.	E-Reports			
	Not at all	174	76	$\chi^2=0.946$
	Rarely	149	67	df =3
	Occasionally	417	174	p > 0.05
	Very often	402	156	Not Significant
5.	E-Newspapers			
	Not at all	94	36	$\chi^2=0.185$
	Rarely	173	73	df =3
	Occasionally	501	209	p > 0.05
	Very often	374	155	Not Significant
6.	Online Shopping			
	Not at all	143	58	$\chi^2=2.567$
	Rarely	191	94	df =3
	Occasionally	424	174	p > 0.05
	Very often	384	147	Not Significant
7.	Social Network			
	Not at all	232	99	$\chi^2=0.080$
	Rarely	132	54	df =3
	Occasionally	393	162	p > 0.05
	Very often	385	158	Not Significant
8.	Online Tutorials			
	Not at all	118	41	$\chi^2=1.147$
	Rarely	80	35	df =3
	Occasionally	281	121	p > 0.05

	Very often	663	276	Not Significant
9.	Open Source Software			
	Not at all	134	53	$\chi^2=0.855$
	Rarely	127	60	df =3
	Occasionally	677	278	p > 0.05
	Very often	204	82	Not Significant
10.	Webpage Creation			
	Not at all	439	191	$\chi^2=1.087$
	Rarely	147	54	df =3
	Occasionally	352	148	p > 0.05
	Very often	204	80	Not Significant
11.	Subject Gateways/E-portals			
	Not at all	161	68	$\chi^2=0.938$
	Rarely	295	132	df =3
	Occasionally	406	164	p > 0.05
	Very often	280	109	Not Significant

H₀: There is no significant association between respondents' Gender and Usage of e-resources.

Statistical tool: 'Chi-square'-test

Interpretation:

The above table shows that there is no significant association between respondents' Gender and E-journals ($\chi^2=0.030$, p > 0.05). Further, there is no significant association between respondents' Gender and E-Books ($\chi^2=0.481$, p > 0.05). Likewise, there is no significant association between respondents' Gender and E-Theses ($\chi^2=0.118$, p > 0.05).

It is know that there is no significant association between respondents' Gender and E-Reports ($\chi^2=0.946$, p > 0.05). In addition, there is no significant association between respondents' Gender and E-Newspapers ($\chi^2=0.185$, p > 0.05). It is evident that there is no significant association between respondents' Gender and Online Shopping ($\chi^2=2.567$, p > 0.05). Further, there is no significant association between respondents' Gender and Social Network ($\chi^2=0.080$, p > 0.05). Similarly, there is no significant association between respondents' Gender and Online Tutorials ($\chi^2=1.147$, p > 0.05). In addition, there is no significant association between respondents' Gender and Open Source Software ($\chi^2=0.855$, p

> 0.05). It is found that there is no significant association between respondents' Gender and Webpage Creation ($\chi^2=1.087$, $p > 0.05$). Finally, that there is no significant association between respondents' Gender and Subject Gateways/E-portals ($\chi^2=0.938$, $p > 0.05$).

H₁: It was found that there is no significant association between respondents' Gender and usage of e-resources.

Hence null hypothesis is accepted.

TABLE 4
TABLE SHOWING BARRIERS IN ACCESSING E-RESOURCES

S.No	Barriers in Accessing E-Resources	No of Respondents (n:1615)	Percentage
1.	Required password not known		
	Never	797	49.3
	Sometimes	136	8.4
	Often	682	42.2
2.	Access has been restricted to campus only		
	Never	179	11.1
	Sometimes	655	40.6
	Often	781	48.4
3.	Virus		
	Never	523	32.4
	Sometimes	666	41.2
	Often	426	26.4
4.	Library does not subscribe the required titles		
	Never	678	42.0
	Sometimes	812	50.3
	Often	125	7.7
5.	Slow due to poor bandwidth		
	Never	1189	73.6
	Sometimes	426	26.4

	Often	-	-
6.	Don't know how to search		
	Never	1071	66.3
	Sometimes	400	24.8
	Often	144	8.9
7.	Lack of time		
	Never	678	42.0
	Sometimes	793	49.1
	Often	144	8.9
8.	Limited Access to computers		
	Never	959	59.4
	Sometimes	280	17.3
	Often	376	23.3
9.	Difficult to find relevant information		
	Never	1228	76.0
	Sometimes	155	9.6
	Often	232	14.4

Source: *Primary Data*

From table 4, it is revealed that nearly half (i.e.) 49.3 percent of the respondents never faced the problem of required password to access e-resources and nearly half (i.e.) 48.4 percent of the respondents often faced the problem of access to e-resources since it is restricted to campus only. Nearly half (i.e.) 41.2 percent of the respondents sometimes faced the problem of virus to access e-resources and more than half (i.e.) 50.3 percent of the respondents sometimes faced problem to access e-resources since the library did not subscribe the required titles. Nearly three-fourth (i.e.) 73.6 percent of the respondents never faced problem of slow due to poor bandwidth to access e-resources and majority (i.e.) 66.3 percent of the respondents never faced problem to access e-resources due to not knowing how to search. Nearly half (i.e.) 49.1 percent of the respondents sometimes faced problem to access e-resources due to lack of time and more than half (i.e.) 59.4 percent of the respondents never faced problem to access e-resources due to limited access to computers. More than three-fourth (i.e.) 76.0 percent of the respondents never faced problem to access e-resource due to difficult to find relevant information.

MAJOR FINDINGS OF STUDY

1. More than three-fourth (i.e.) 76.9 percent of the respondents expressed that library has less than 500 e-books
2. More than half (i.e.) 55.8 percent of the respondents consented that library has less than 500 e-journals
3. Vast majority (i.e.) 96.2 percent of the respondents stated that library has less than 5 online database and less than 2 offline databases
4. Exactly half (i.e.) 50.0 percent of the respondents accepted that project reports was available in the library
5. More than half (i.e.) 51.9 percent of the respondents expressed that Course Materials was available in the library
6. Nearly three-fourth (i.e.) 72.3 percent of the respondents occasionally used e-journals
7. More than three-fourth (i.e.) 75.6 percent of the respondents occasionally used e-books
8. More than half (i.e.) 58.1 percent of the respondents very often used online tutorials
9. More than half (i.e.) 59.1 percent of the respondents occasionally used open source software
10. Nearly three-fourth (i.e.) 73.6 percent of the respondents never faced problem of slow due to poor bandwidth to access e-resources
11. Majority (i.e.) 66.3 percent of the respondents never faced problem to access e-resources due to not knowing how to search
12. More than three-fourth (i.e.) 76.0 percent of the respondents never faced problem to access e-resource due to difficult to find relevant information

SUGGESTIONS

1. The resources subscribed by the library should be periodically evaluated by the librarian on its usability and decision is to be taken whether to continue or to discontinue the subscription by conducting user's survey time to time.
2. Librarians should organize seminars, workshops and orientation programs for faculty members at regular interval of time to keep them in phase with latest technologies and train them using advance search options for retrieval of relevant information.

3. The government may conduct a survey to identify the information need of the faculty members in engineering colleges and organize faculty orientation programs on latest technological updates and resources available in the education sector.
4. The government may provide financial support to the self-financing colleges for purchasing resources, computers and for internet connectivity.
5. The faculty members should further improve their information searching skills to make better use of largely available e-information resources by attending orientation classes conducted by the librarian.
6. Faculty members should check the usability of e-resources and give suggestions to librarian for the better utilization of e-resources

CONCLUSION

As per the study, certain trends are evident regarding the e-resource adaptation among the engineering faculty members in Kerala. The availability of e-resources in engineering colleges are moderate; which needs urgent attention. Although the usage of e-books and e-journals by faculty are better, the familiarity with online tutorials are moderate. According to statistics, faculty needs more exposure towards the adoption of open source softwares. On a positive note, it is found that the engineering college libraries in the state are well equipped in catering the requirements of clients; students as well as faculty members.

However, since infrastructure is the backbone for quality services, timely updation of systems and services are essential. Above all, effective communication is needed in micro level and macro level on the availability and usage of library resources in engineering colleges of Kerala.

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